# Resources

# Literature Cited in the 2002 Puget Sound Update

- Batelle Marine Research Laboratory, and Anne Arundel Community College. 1988. Review of Technical Literature and Characterization of Aquatic Surface Microlayer Samples, for the U.S. Environmental Protection Agency, Chesapeake Bay Program Office.
- Beamish, R.J., G.A. McFarlane, C.M. Neville and I. Pearsall. 2001a. Changes in the Strait of Georgia Ecopath model needed to balance the abrupt increases in productivity that occurred in 2000. Fisheries Oceanography (in press).
- Beamish, R.J., C. Neville, R. Sweeting, K. Poier and R. Khan. 2001b. Recent Increases in Coho Production in the Strait of Georgia are Related to Changes in Climate.
   Proceedings of the 2001 Puget Sound Research Conference, Puget Sound Water Quality Action Team. Olympia, Washington.
- Beamish, R.J., B.L. Thomson and G.A. McFarlane. 1992. Spiny dogfish predation on chinook and coho salmon and the potential effects on hatchery-produced salmon. *Trans. Am. Fish. Soc.* 121(4):444-455.
- Bezdicek, D., M. Fauci, D. Caldwell, and R. Finch. 2000. Compost quality new threats from persistent herbicides. *Agrichemical and Environmental News.* **174**:9-13.
- Butkus, Steve, Dave Hallock and Chad Wiseman. 2001. *Conditions of Freshwaters in Washington State: Technical Appendix.* Pub. No. 01-03-026. Washington State Department of Ecology. 42pp.
- Calambokidis, J., G.H. Steiger, J.C. Cubbage, S. Kort, S. Belcher, and M. Meehan. 1988. Status of Puget Sound harbor seals: trends in population size and contaminant concentrations. In: *First Annual meeting on Puget Sound Research*, Seattle, WA. Puget Sound Water Quality Authority. pp. 589-597.
- Carlton, J.T. 1979. *History, Biogeography and Ecology of the Introduced Marine and Estuarine Invertebrates of the Pacific Coast of North America.* PhD Thesis. University of California, Davis, California.
- Center for Biological Diversity. 2001. Updated Computer Analysis Shows Puget Sound Killer Whales Likely To Become Extinct In 33-121 Years If Conservation Action Not Taken Immediately. Press release dated July 18, 2000. Accessed from <a href="http://www.biologicaldiversity.org/swcbd/press/orcadecline.html">http://www.biologicaldiversity.org/swcbd/press/orcadecline.html</a> on January 15, 2002.
- CDC. 1998. Outbreak of *Vibrio parahaemolyticus* Infections Associated with Eating Raw Oysters—Pacific Northwest, 1997. *Morbidity and Mortality Weekly Report.* **47**(22):457-462.

- Cohen, A.N. and J.T. Carlton. 1995. Biological Report. Nonindigenous Aquatic Species in a United States Estuary: A Case Study of the Biological Invasions of the San Francisco Bay and Delta. A Report for the U.S. Fish and Wildlife Service, Washington DC and The National Sea Grant College Program. Connecticut Sea Grant, NTIS Report Number PB96-166525.
- Cohen, A.N., C.E. Mills, H. Berry, M.J. Wonham, B. Bingham, B. Bookheim, J.T. Carlton, J.W. Chapman, J.R. Cordell, L.H. Harris, T. Klinger, A. Kohn, C.C. Lambert, G. Lambert, K. Li, D. Secord and J. Toft. 1998. Report of the Puget Sound Expedition, September 8-16, 1998: A Rapid Assessment Survey of Nonindigenous Species in the Shallow Waters of Puget Sound. For the Washington State Department of Natual Resources, Olympia, Washington and the U.S. Fish and Wildlife Service, Lacey, Washington.
- D'Arrigo, R., R. Villalba and G. Wiles. 2001. Tree-ring estimates of Pacific decadal climate variability. *Climate Dynamics.* **18**(3/4):219-224.
- Ebbesmeyer, Curtis C., Carol A. Coomes, Glenn A. Cannon and Clifford A. Barnes. 1984. Synthesis of Current Measurements in Puget Sound, Washington—Volume 3: Circulation in Puget Sound: An Interpretation Based on Historical Records of Currents. NOAA Technical Memorandum NOS OMS 5. NOAA, Rockville, Maryland.
- Ecology. 2001. *Conditions of Freshwaters in Washington State for the Year 2000.* Pub. No. 01-03-025. Washington State Department of Ecology. 16pp.
- Eisenhardt, Eric. 2002. Demographics of nearshore rocky reef fish. *Puget Sound Notes* **46**:4-8.
- Elton, C. 1958. *The Ecology of Invasions by Animals and Plants.* Methuen and Co., London.
- GAO. 2001. Land Management Agencies: Restoring Fish Passage Through Culverts on Forest Service and BLM Lands in Oregon and Washington Could Take Decades. GAO-02-136. U.S. General Accounting Office. Washington D.C.
- GBEI. 2002. Georgia Basin / Puget Sound Ecosystem Indicators Report. A report of the Transboundary Georgia Basin-Puget Sound Environmental Indicators Working Group. Georgia Basin Ecosystem Initiative Publication Number: EC/GB-01-034. Washington State Department of Ecology Publication Number: 02-01-002. 22pp.
- Gustafson, R.G., W.H. Lenarz, B.B. McCain, C.C. Schmitt, W.S. Grant, T.L. Builder, and R.D. Methot. 2000. Status review of Pacific hake, Pacific cod, and Walleye Pollock from Puget Sound, Washington. NOAA Technical Memorandum NMFS-NWFSC-44. U.S. Dept. of Commerce.
- Hare, S.R., N.J. Mantua and R.C. Francis. 1999. Inverse production regimes: Alaskan and West Coast Pacific Salmon. *Fisheries.* **21**(1):6-14).
- Hershberger, P.K., R.M. Kocan and N.E. Elder. 2000. Egg incubation studies provide clues to the future of the once-largest herring stock in Puget Sound. *Puget Sound Notes* **44**:5-9.
- Huber, H. R., S. J. Jeffries, R. F. Brown, R. L. DeLong and G. VanBlaricom. 2001. Correcting aerial survey counts of harbor seals *(Phoca vitulina richardsi)* in Washington and Oregon. *Marine Mammal Science* 17(2):276-295.
- IPCC. 1996. *Climate Change 1995. The IPCC second scientific assessment.* Houghton JT, L.G. Meira Filho, B.A. Callander, N. Harris, A. Kattenberg, K. Maskell (eds.). Cambridge University Press, Cambridge, 572 pp.

- Jeffries, S.J. 1985. Occurrence and distribution patterns of marine mammals in the Columbia River and adjacent coastal waters of northern Oregon and Washington. In: Marine mammals and their interactions with fisheries of the Columbia River and adjacent waters, 1980-1982. NMFS, NWAFC Processed Report 85-04. National Marine Fisheries Service, NWAFC. Seattle, Washington.
- Johnson, L. 2001. An analysis in support of sediment quality thresholds for polycyclic aromatic hydrocarbon (PAHs) to protect estuarine fish. U.S. Dept of Commerce Tech Memo NMFS-NWFSC-47. 30 pp.
- King County. 1995. Pier 53-55 sediment cap and enhanced natural recovery area remediation project—1993 data. Prepared for Elliott Bay/ Duwamish Restoration Program by King County Department of Metropolitan Services, Panel Publication 11, December 1995.
- Lamont, M. G., J.T. Vida, J.T. Harvey, S. Jeffries, R. Brown, H.R. Huber, R. DeLong, and W.K. Thomas. 1996. Genetic substructure of Pacific harbor seals (Phoca vitulina richardsi) of Washington, Oregon, and California. *Marine Mammal Science* 12:402-413.
- Lemberg, N. A., M.F. O'Toole, D.E. Penttila, and K.C. Stick. 1997. 1996 Forage Fish Stock Status Report. Stock Status Report No. 98-1. Washington State Department of Fish and Wildlife. 83 pp.
- Llansó, Roberto J., Sandra Aasen, Kathy Welch. 1998a. Marine Sediment Monitoring Program I. Chemistry and Toxicity Testing 1989-1995. Publication No. 98-323. Environmental Investigations and Laboratory Services Program, Washington State Department of Ecology. Olympia, Washington. 101 pp.
- Llansó, Roberto J. 1998b. Marine Sediment Monitoring Program II. Distribution and Structure of Benthic Communities in Puget Sound 1989-1995. Publication No. 98-328. Environmental Investigations and Laboratory Services Program, Washington State Department of Ecology. Olympia, Washington 114 pp.
- Long, Edward R., Donald D. Mac Donald, Sherri L. Smith, Fred D. Calder. 1995. Incidence of adverse biological effects within ranges of chemical concentrations in marine and estuarine sediments. *Environmental Management* **19**(1):81-97.
- Long, Edward R., Jawed Hameedi, Andrew Robertson, Margaret Dutch, Sandra Aasen, Christina Ricci, Kathy Welch, William Kammin, R. Scott Carr, Tom Johnson, James Biedenbach, K. John Scott, Cornelia Mueller and Jack W. Anderson. 1999. Sediment Quality in Puget Sound Year 1—Northern Puget Sound. Publication No. 99-347, Washington State Department of Ecology, Olympia, Washington and Technical Memo No. 139, National Oceanic and Atmospheric Administration, Silver Spring, Maryland.
- Long, Edward R., Jawed Hameedi, Andrew Robertson, Margaret Dutch, Sandra Aasen, Kathy Welch, Stuart Magoon, R. Scott Carr, Tom Johnson, James Biedenbach, K. John Scott, Cornelia Mueller and Jack W. Anderson. 2000.
  Sediment Quality in Puget Sound Year 2—Central Puget Sound. Publication No. 00-03-055, Washington State Department of Ecology, Olympia, Washington and Technical Memo No. 147, National Oceanic and Atmospheric Administration, Silver Spring, Maryland.
- Long, Edward R., Jawed Hameedi, Andrew Robertson, Margaret Dutch, Sandra Aasen, Kathy Welch, Stuart Magoon, R. Scott Carr, Tom Johnson, James Biedenbach, K. John Scott, Cornelia Mueller and Jack W. Anderson. 2002. Sediment Quality in Puget Sound Year 3—Southern Puget Sound. Washington State Department of Ecology, Olympia, Washington and National Oceanic and Atmospheric Administration.

- Lozon, J.D. and H.J. MacIssac. 1997. Biological invasions: are they dependent on disturbance? *Environmental Review* 5:131-144.
- Mahaffy, M.S., K.M. Ament, A.K. McMillan and D.E. Tillitt. 2001. *Environmental Contaminants in Bald Eagles Nesting in Hood Canal, Washington, 1992-1997.*Final Report 13410-1130-1505. U.S. Fish and Wildlife Service.
- Mantua, N.J., S.R. Hare, Y. Zhang, J.M. Wallace and R.C. Francis. 1997. A Pacific interdecadal climate oscillation with impacts on salmon production. *Bulletin of the American Meteorological Society.* **78**:1069-1079.
- Mariën, Koenraad and Glen M. Patrick. 2001. Exposure analysis of five fish-consuming populations for overexposure to methylmercury. *Journal of Exposure Analysis and Environmental Epidemiology.* **11**:193-206.
- Marine Sediment Monitoring Team. In prep. Analysis of Sediment Quality at 10 Long-Term Stations in Puget Sound for the Puget Sound Ambient Monitiong Program's Sediment Monitoring Component—Chemistry and Benthic Infauna. Washington State Department of Ecology, Olympia, Washington.
- McCarter, Linda. 1999. The Multiple Identities of *Vibrio parahaemolyticus. Journal of Molecular Microbiology and Biotechnology.* **1**(1):51-57.
- McPhaden, M.J. 1999. Genesis and evolution of the 1997-98 El Niño. *Science* **283**:950-954.
- Meador, J. P. 2000. An analysis in support of tissue and sediment based threshold concentrations of polychlorinated biphenyls (PCBs) to protect juvenile salmonids listed by the Endangered Species Act. NOAA "white paper." NOAA, Seattle.
- Mickelson, S. Personal Communication, February 13, 2001. S. Mickelson, King County Dept. of Natural Resources & Parks.
- Mills, C.E., A.N. Cohen, H.K. Berry, M.J. Wonham, B. Bingham, B. Bookheim, J.T. Carlton, J.W. Chapman, J. Cordell, L.H. Harris, T. Klinger, A.J. Kohn, C. Lambert, G. Lambert, K. Li, D.L. Secord and J. Toft. 2000. *The 1998 Puget Sound Expedition: a rapid assessment survey for nonindigenous species in the shallow waters of Puget Sound.* In: Proc. First National Conference on Marine Bioinvasions, Jan. 24-27, 1999, Cambridge, Massachusetts. pp130-138.
- Moore, B. and E. Freyman. 2001. A Preliminary Survey of Surface Microlayer Contaminants in Burrard Inlet, Vancouver, B.C. Canada. In: *Proceedings of the 2001 Puget Sound Research Conference.* T. Droscher, Editor. Puget Sound Water Quality Action Team. Olympia, Washington.
- Mote, P., M. Holmberg, N. Mantua. 1999. *Impacts of Climate Change: Pacific Northwest. A summary of the Pacific Northwest Regional Assessment Group for the U.S. Global Change Research Program,* A. Snover, E. Miles and the JISAO/SMA Climate Impacts Group (eds.), JISAO/SMA Climate Impacts Group, University of Washington, Seattle, Washington.
- Musick, J.A., M.M. Harbin, S.A. Berkeley, G.H. Burgess, A.M. Eklund, L. Findley,
  R.G. Gilmore, J.T. Golden, D.S. Ha, G.R. Huntsman, J.C. McGovern, S.J. Parker,
  S.G. Poss, E. Sala, T.W. Schmidt, G.R. Sedberry, H. Weeks and S.G. Wright. 2000.
  Marine, Estuarine and Diadromous Fish Stocks at Risk of Extinction in North
  America (Exclusive of Pacific Salmonids). Fisheries 25(11):6-30.
- NCDC (National Climatic Data Center). 2001. *Climate of 2001—Annual Review; Preliminary Report.* National Oceanic and Atmospheric Administration, Washington, DC.

- Nichols, F. 2001. Is Climate Change a Factor in Observed Interdecadal Change in the Deep Puget Sound Benthos? In: *Proceedings of the 2001 Puget Sound Research Conference.* T. Droscher, Editor. Puget Sound Water Quality Action Team. Olympia, Washington.
- Newby, T. 1973. Changes in the Washington State harbor seal population, 1942-1972. *Murrelet* 1:4-6.
- NSSP. 1999. *National Shellfish Sanitation Program Model Ordinance 1999* Revision. Department of Health and Human Services, Washington DC.
- OFM. 2002. 2002 Population Trends for Washington State. Office of Financial Management. Olympia, Washington.
- O'Neill, S.M and West, J.E. 2001. Exposure of Pacific herring (*Clupea pallasi*) to persistent organic pollutants in Puget Sound and the Georgia Basin. *Proceedings of 2001 Research in Puget Sound Conference*, February 2001. Puget Sound Water Quality Action Team.
- O'Neill, S. M., J.E. West, and J.C. Hoeman. 1998. Spatial trends in the concentration of polychlorinated biphenyls (PCBs) in chinook (Oncorhynchus tshawytscha) and coho salmon (O. kisutch) in Puget Sound and factors affecting PCB accumulation: results from the Puget Sound Ambient Monitoring Program. In: Puget Sound Research '98 Proceedings, Seattle, Washington. Puget Sound Water Quality Action Team. pp.312-328.
- PTI Environmental Services. 1990. Puget Sound Microlayer Workshop: Summary Report, for U.S. Environmental Protection Agency, Seattle, Washington.
- Pacific Fishery Management Council. Final Council acceptable biological catch (ABC) and optimum yield (OY) recommendations for 2001 for the Washington, Oregon, and California region by management area (metric tons). Portland, Oregon.
- Palsson, Wayne. 2002. Scientific Approaches to Designing a Marine Reserve Network for Puget Sound. *Puget Sound Notes* **46**:1-4
- Palsson, W.A., J.C. Hoeman, G.G. Bargmann, and D.E. Day. 1997. 1995 status of *Puget Sound bottomfish stocks* (revised). Report No. MRD97-03. Washington State Department of Fish and Wildlife. 98 pp.
- Palsson, W.A., T.J. Northup, and M.W. Barker. 1998. *Puget Sound groundfish management plan*. Washington State Department of Fish and Wildlife. 43 pp.
- PSWQAT. 1998. *Puget Sound Update.* Puget Sound Water Quality Action Team. Olympia, Washington. 96 pp.
- Romberg, P., C. Homan, and D. Wilson. 1995. Monitoring at two sediment caps in Elliott Bay. *Proceedings of 1995 Research in Puget Sound Conference,* Bellevue, Washington, January 12-14. Puget Sound Water Quality Action Team, Olympia, Washington, pp.289-299.
- Ross, P.S., G.M. Ellis, M.G. Ikonomou, L.G. Barrett-Lennard and R.F. Addison. 2000. High PCB Concentrations in Free-Ranging Pacific Killer Whales, *Orcinus orca:* Effects of Age, Sex and Dietary Preference. *Marine Pollution Bulletin* 40(6):504-515.
- Ross, P.S., S.J. Jeffries, M.G. Ikonomou, and R.F. Addison. 1998. Elevated PCB levels in Puget Sound Harbor seals *(Phoca vitulina)*. *Proceedings of the Puget Sound Research '98*. Puget Sound Water Quality Action Team, Olympia, Washington.
- Ruiz, G.M., P. Fofonoff, J.T. Carlton, M.J. Wonham, and A.H. Hines. 2000. Invasion of coastal marine communities in North America: apparent patterns, processes, and biases. *Annual Review of Ecology and Systematics.* **31**:481-531.

- Salomon, Anne. 2002. Ecological interactions and indirect effects in marine reserves: Expect the unexpected. *Puget Sound Notes* **46**:8-12.
- Saunders, M.W. and G.A. McFarlane. 1999. *Pacific hake-Strait of Georgia stock assessment for 1999 and recommended yield options for 2000.* Canadian Stock Assessment Secretariat Research Document 99/200.
- Schmidt, M. and P. Johnson. 2001. *Toxics in the Puget Sound Food Web.* People for Puget Sound. Seattle, Washington. 30pp.
- Speich, S.M. and T.R.Wahl. 1989. *Catalog of Washington seabird colonies.* Biological Report 88(6). U.S. Fish and Wildlife Service, Washington DC.
- Stout, H.A., R.G. Gustafson, W.H. Lenarz, B.B. McCain, D.M. VanDoornik, T.L. Builder, and R.D. Methot. 2001a. Status review of Pacific herring in Puget Sound, Washington. U.S. Dept. of Commerce. NOAA Technical Memorandum. NMFS-NWFSC-45.
- Stout, H.A., B.B. McCain, R.D. Vetter, T.L. Builder, W.H. Lenarz, L.L. Johnson, and R.D. Methot. 2001b. Status review of copper rockfish (Sebastes caruinus), quillback rockfish (S. maliger), and brown rockfish (S. auriculatus) in Puget Sound, Washington. NOAA Technical Memorandum NMFS-NWFSC-46, 158 pp.
- Temte, J. L. 1986. Photoperiod and the timing of pupping in the Pacific harbor seal *(Phoca vitulina richardsi)* with notes on reproduction in northern fur seals and Dall porpoises. Unpublished M.S. Thesis. Oregon State University, Corvallis, Oregon.
- Washington State Department of Health. 1999. Evaluation of Evidence Related to the Development of a Tolerable Daily Intake for Methylmercury. Office of Environmental Health Assessment Services, Washington State Department of Health. Olympia, Washington.
- Werth, John. 2001. *Annual Fire Weather Summary: Western Washington 2000.* National Weather Service Forecast Office, Seattle.
- Wibbertmann, Dr. A, Dr. J. Kielhorn, Dr. G. Koennecker, Dr. I. Mangelsdorf, and Dr. C. Melber. 2000. Concise International Chemical Assessment Document: Benzoic Acid and Sodium Benzoate (No. 26). International Programme on Chemical Safety (United Nations Environment Programme, International Labor Organization, and World Health Organization). Fraunhofer Institute for Toxicology & Aerosol Research, Hanover, Germany.
- WSDOT. 2000. *Report to the Legislature: Fish Passage Barrier Removal Grant Program.* Environmental Affairs Office, WSDOT, Olympia, Washington.
- USDI (U.S. Department of the Interior). 1999. Endangered and Threatened Wildlife and Plants; Proposed Rule to Remove the Bald Eagle in the Lower 48 States from the List of Endangered and Threatened Wildlife. *Federal Register*. 64(128):36,454-36,464.

# **PSAMP REPORTS**

- Cohen, A.N., H.D. Berry, C.E. Mills, D. Milne, K. Britton-Simmons, M.J. Wonham, D.L. Secord, J.A. Barkas, B. Bingham, B.E. Bookheim, J.E. Byers, J.W. Chapman, J.R. Cordell, B. Dumbauld, A. Fukuyama, L.H. Harris, A.J. Kohn, K. Li, T.F. Mumford Jr., V. Radashevsky, A.T. Sewell, K. Welch. 2000. Washington State Exotics Expedition 2000: *A Rapid Survey of Exotic Species in the Shallow Waters of Elliott Bay, Totten and Eld Inlets, and Willapa Bay.* The Nearshore Habitat Program, Washington State Department of Natural Resources, Olympia, Washington. 46 pp.
- Determan, Tim. 2001. *Status and Trends in Fecal Coliform Pollution in Puget Sound Year 2000.* Washington State Department of Health, Office of Food Safety and Shellfish Programs. 81pp.
- Determan, Tim. 2000. *Paralytic Shellfish Poisoning (PSP) Patterns in Puget Sound Shellfish Year 2000*. Washington State Department of Health.
- Ecology. 2001. *Conditions of Freshwaters in Washington State for the Year 2000.* Pub. No. 01-03-025. Washington State Department of Ecology. 16pp.
- Kazakov, N. 2001. *Saltwater shoreline modification associated with single family residences in Washington state.* Washington State Department of Natural Resources, Nearshore Habitat Program. 13 pp.
- Nearshore Habitat Program. 2000. *The Washington State ShoreZone Inventory*. Washington State Department of Natural Resources, Olympia, Washington.
- Nysewander, D.R., Evenson, J.R., Murphie, B.L., and T.A. Cyra. 2001. *Report of Marine Bird and Marine Mammal Component, Puget Sound Ambient Monitoring Program, for July 1992 to December 1999 Period.* Agency Report, Washington Department of Fish and Wildlife, Olympia, Washington, 161pp.
- West, James, Sandra O'Neill, Greg Lippert and Stephen Quinnell. 2001. *Toxic Contaminants in marine and Anadromous Fishes from Puget Sound, Washington: Results of the Puget Sound Ambient Monitoring Program Fish Component 1989-1999.* Washington State Department of Fish and Wildlife, Olympia Washington.

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MARINE BIRDS AND MAMMALS

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# ACRONYMS

 $\mbox{CFU}\xspace$  / cfu  $\xspace$  Colony Forming Units. A measure of bacterium concentration.

CSL Cleanup Screening Level. A sediment contaminant threshold.

DDT dichlorodiphenyl-trichloroethane

ERM Effects Range Median

ENSO El Niño – Southern Oscillation FAC Fluorescing Aromatic Compounds

HCB Hexachlorobenzene

HPAH High [molecular weight] Polycyclic Aromatic Hydrocarbons

K Carrying Capacity

LPAH Low [molecular weight] Polycyclic Aromatic Hydrocarbons

MLLW Mean Lowest Low Water

MMPA Marine Mammal Protection Act (1972)

MNPL Maximum Net Productivity Level

MPN Mean Probable Number. Used to quantify fecal coliform levels.

MSMT Marine Sediment Monitoring Team

mt Metric Tons

NMFS National Marine Fisheries Service

NOAA National Oceanic and Atmospheric Administration

OSP Optimum Sustainable Population (in the context of population

analysis) Oil Spill Team (in the context of toxic contaminants)

PAH Polycyclic Aromatic Hydrocarbons

PCB Polychlorinated biphenyls

ppDDE para-para-dichlorophenyl-dichloroethylene; a breakdown product

of DDT

PSAMP Puget Sound Ambient Monitoring Program

PSWQAT Puget Sound Water Quality Action Team

SQS Sediment Quality Standards, Washington State

TPAH Total PAH concentration

VOC Volatile Organic Compounds

WDFW Washington Department of Fish and Wildlife

WQI Water Quality Index